

SUPPLEMENTAL MATERIAL

Table 1. Full list of inclusion and exclusion criteria

Inclusion Criteria	Age >50 years Peak aortic jet velocity of >2.5 m/s on Doppler echocardiography Grade 2-4 calcification of the aortic valve on echocardiography
Exclusion Criteria	Women of childbearing potential who have experienced menarche, are premenopausal, Women who have not been sterilized or who are currently pregnant. Women who are breastfeeding Renal failure (estimated glomerular filtration rate of <30 mL/min) Inability to undergo scanning Allergy or contraindication to iodinated contrast Inability or unwilling to give informed consent Likelihood of non-compliance to treatment allocation or study protocol. Anticipated or planned aortic valve surgery in the next 6 months, Life expectancy less than 2 years, Treatment for osteoporosis with bisphosphonates or denosumab.

Known allergy or intolerance to alendronate or denosumab, or any of their excipients

Abnormalities of the oesophagus or conditions, which delay oesophageal/gastric emptying.

Inability to sit or stand for at least 30 minutes.

Hypocalcaemia

Regular calcium supplementation

Dental extraction within 6 months

Long term corticosteroid use.

History of osteonecrosis of the jaw

Poor dental hygiene

Major or untreated cancers

Figure 1. Linear regression analysis of scan-rescan reproducibility versus calcium burden. The mean difference between ^{18}F -Fluoride TBRMDSmean measures for the 15 scan pairs is plotted against the log-transformed Computed Tomography calcium score (\log_{10} Agatston Units). No proportional bias is observed.

